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CAVE INVENTORY CLASSIFICATION AND MANAGEMENT

GIFFORD PINCHOT NATIONAL FOREST

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Clemson Class of 1993
12-27-94 -- Final Draft

This paper was prepared as a student project in partial fulfillment of the requirements of the Professional Development for Outdoor Recreation Management program at Clemson University. It in no way reflects USDA Forest Service Policy nor are the opinions expressed those of anyone other than the author.



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ABSTRACT

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TITLE: Cave Classification and Inventory-Gifford Pinchot National Forest

ABSTRACT: The latest estimates suggest that as many as 200 caves are located on the Gifford Pinchot National Forest. These caves, predominantly lava tubes, contain delicate resources such as lava stalactites, stalagmites, cave adapted organisms, bats, archaeological sites, and bone deposits. Because of the mystique, challenge, and mystery they provide, they attract recreational use by spelunkers and serious cavers alike. This use, if left uncontrolled in sensitive caves, can result in permanent and irreversible damage.

Surface management activities such as road building, logging, fertilization, and spraying of herbicides or pesticides, may also damage caves. Caves are linked to the surface by hydrology. Changes in surface vegetation, and resulting changes in water infiltration rates, can cause changes in nutrient availability for cave adapted organisms. Road construction which diverts drainage water into caves, breaches caves, or provides easy access for recreationists, can impact caves.

The Gifford Pinchot National Forest Land and Resource Management Plan was completed in 1991. In the plan it was recognized that caves are a Forest resource, requiring management. Time to develop cave management direction for the forest was unavailable, and the implementation regulations for the Federal Cave Resources Protection Act were pending. The plan recognized certain impacts to caves, provided guidance for surface management activities around caves, and stated that within ten years a cave management analysis would be made. This is that analysis.

This paper examines policy and legal requirements found in the Forest Land and Resource Management Plan, Forest Service Manual (2356 Cave Management), and the Federal Cave Resources Protection Act of 1988, and 36 CFR, Part-290, Cave Resource Management. From these requirements are developed cave management procedures for the Gifford Pinchot National Forest.

KEYWORDS: Caves, Cave Management, Federal Cave Resources Protection Act, Cave Inventories

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EXECUTIVE SUMMARY

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TITLE: Cave Inventory, Classification and Management
Gifford Pinchot National Forest

SUMMARY:

This project has two objectives. The first is development of a cave management program for caves located on the Gifford Pinchot National Forest, in southwest Washington. Secondly is establishment of a pilot cave management program. The pilot program will serve as a training tool; an example of successful management which may be copied by other national forests.

The first official Forest Service recognition of the value of cave resources surfaced less than ten years ago. In 1986 appeared the first Forest Service Manual Direction for cave management. In 1988 the Federal Cave Resources Protection Act (FCRPA) was signed into law, mandating the Departments of Agriculture and Interior to manage caves. The implementation regulations, 36 CFR, Part--290 Cave Resources Management, were published July 1, 1994. These regulations describe criteria for determining cave significance required by the FCRPA. On the Gifford Pinchot National Forest 162 caves have been nominated, all of which are expected to meet the criteria.

The problem with managing caves is a lack of qualified speleologists to evaluate and manage underground resources. Caves contain resources values which can be divided into six categories: Biological, Hydrological, Cultural and Historic, Geological / Mineralogical / Paleontological, Educational or Scientific, and Recreational. Any one of these values may require a specialist to evaluate. To make a difficult situation worse, no two caves are alike. Each contains unique values, requiring specially tailored management. This requires cave managers to wear many hats, know a little about a lot, and be able to recognize when to call for assistance.

Much has been written, and discussed, concerning ecosystem management. Cave ecosystems are both limited, and fragile. More endangered species are listed for caves than from any other single environment. Low energy inputs, isolation of invertebrate populations, and unique environmental conditions combine to create ecosystems which evolve independently. Added to this is the three dimensional quality of cave environments, and their vulnerability to surface alterations.

The surface environment over caves closely controls underground ecosystems. Since no plants can grow in caves; cave organisms are dependent upon food from the surface. Dissolved nutrients may be carried in seepage water, washed into cave entrances by floods, carried in by animals, or come from tree roots growing from ceiling cracks. Any surface management which disrupts natural conditions over a cave, poses a potential threat to cave ecosystems. These threats may be minor, or devastating depending upon the environmental conditions linked to a

particular cave. Land managers must be able to assess cave resources, and recognize potential impacts, in order to properly manage cave resources.

Other impacts are of equal concern. Recreational use of caves is growing at a steady rate. People visiting caves can step on cave animals, break formations, disturb hibernating bats, deface walls with graffiti, spread litter, build fires, smoke, or remove artifacts or formations. These impacts are alarmingly common, and have resulted in permanent damage to many Northwest caves. Cave environments do not have the resiliency to recover as do surface ecosystems.

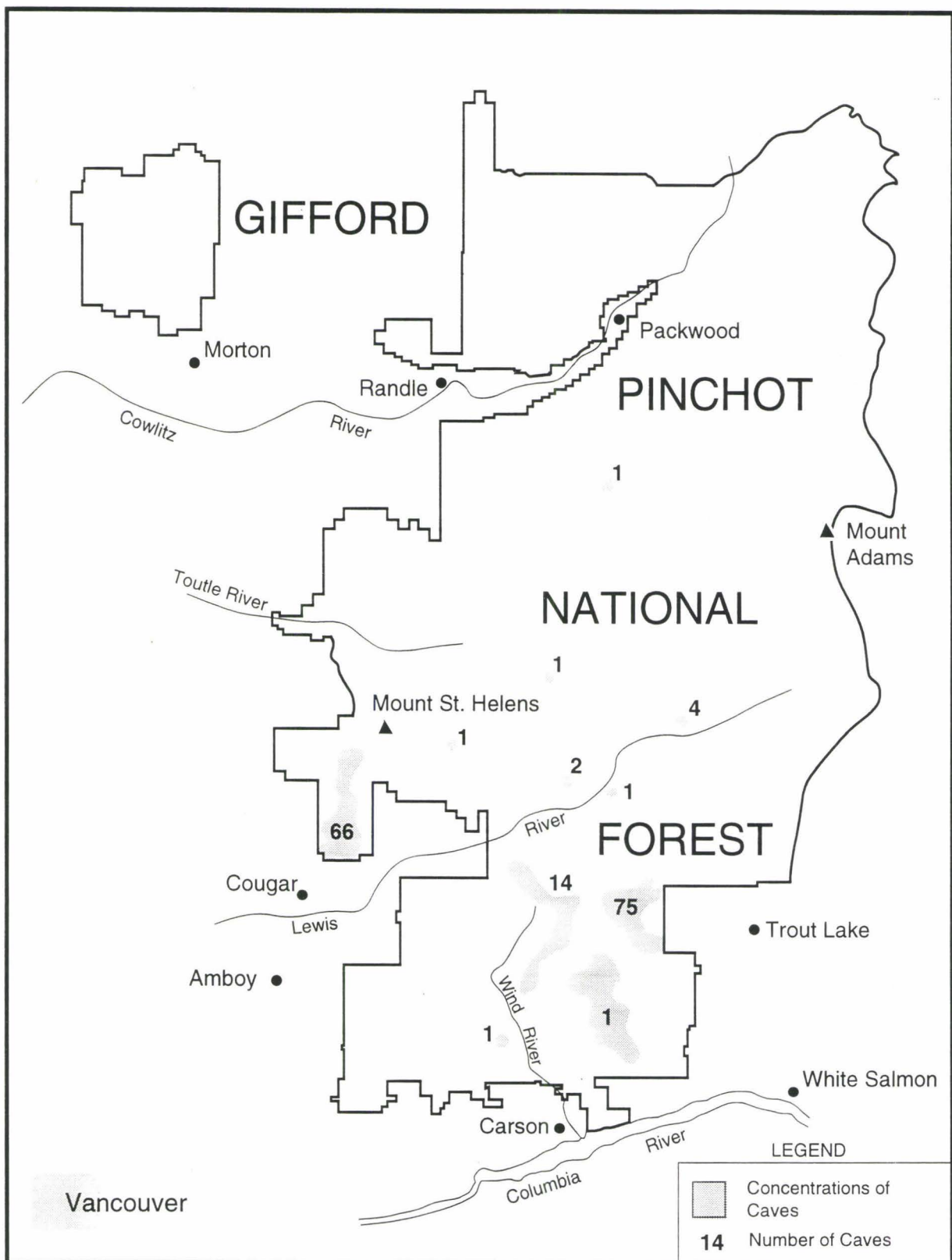
Impacts caused by recreational use can be managed in different ways. The most sensitive caves, if threatened, can be gated, and access controlled. Seasonal closures for protection of bat hibernation, or maternity colonies is being used successfully. Control of cave location information is critical, as are opportunities for public education. Developed caves allow dissemination of interpretive books and brochures, contact with visitors by agency naturalists, and placement of interpretive signs. Ape Cave at Mount St. Helens receives 170,000 visitors each year.

A great need exists for qualified speleologists with the skill necessary to manage Federal cave resources. The lack of qualified personnel emphasizes the need for colleges and universities to develop new degree programs in cave resource management. As qualified personnel become available from the universities, they should be hired into key positions. In the interim agencies must endeavor to provide specialized training to existing personnel in managing cave resources.

Forest Service volunteers are the backbone of cave management. Since cave management is underfunded, the only opportunity to manage the resources is through volunteer assistance. Most volunteers are members of the National Speleological Society, a national organization interested in the exploration, study and conservation of caves. Volunteers from local chapters called "grottos" have donated thousands of hours in labor, inventorying and helping manage caves on the Forest. The Oregon Grotto has volunteered at Mount St. Helens for the past 26 years, contributing hundreds of thousands of dollars worth of labor. This group has adopted the Monument as its special project. The Northwest Cave Research Institute has adopted the Mount Adams Ranger District as its project area. The continued support of volunteers is essential to cave management.

The approach taken in this management plan, is straight forward. The problem is lack of trained staff, and scattered management direction. This document analyzes and interprets laws and policies governing management of cave resources. To this are added specific management actions such as development of a cave inventory process, development of records, evaluation of cave significance, cave classification, entry permits, and a list of required prohibitions. These serve both as a reference tool, and establish cave management direction.

The objectives of this project are modest; a cave resource analysis for a single forest, and a pilot management program which can be replicated elsewhere.



DISTRIBUTION OF CAVES ON THE GIFFORD PINCHOT NATIONAL FOREST

CAVE INVENTORY, CLASSIFICATION, AND MANAGEMENT

GIFFORD PINCHOT NATIONAL FOREST

INTRODUCTION

The Gifford Pinchot National Forest contains the largest concentration of caves in the State of Washington. The Forest Land and Resource Management Plan, Forest Service Manual Direction (2356), and the Federal Cave Resources Protection Act of 1988 provide guidance and legal requirements for managing Federal caves. This cave management plan combines requirements from the above documents and develops a management strategy for caves on the Gifford Pinchot National Forest.

Authority for actions listed in this plan comes from the Federal Cave Resources Protection Act of 1988; The Organic Administration Act of June 4, 1897 (16 U.S.C. 551); Antiquities Act of 1906 (34 Stat. 225; U.S.C. 431 *et seq.*); Archaeological Resources Protection Act (ARPA) October 31, 1979 (16 U.S.C. 470aa); and the Endangered Species Act of 1973 (87 Stat. 884, *as amended*; 16 U.S.C.);

Caves on the Gifford Pinchot National Forest are predominately lava tubes formed in basaltic lavas. The Cave Basalt Flow at Mount St. Helens, the Lake Comcommely, and Peterson Prairie Basalt Flows, and the Big Lava Bed Flow all contain caves. Large shelter caves are found in cliff faces where soft rock has eroded away. Erosional caves are found beneath some recent basalt flows, while talus caves are found in piles of tumbled boulders. Other caves are located where large rock landslides have pulled apart, forming cave passages, and at the top of cliffs where the cliff where outward slumping blocks create deep clefts. At least one vertical chimney, 60 feet deep, remains open at a basaltic vent.

DEFINITIONS

For the purposes of this cave management plan the following terms are used:

CAVE.—The term “cave” means any naturally occurring void, cavity, recess, or system of interconnected passages beneath the surface of the earth or within a cliff or ledge, including any cave resource therein, and which is large enough to permit a person to enter, whether the entrance is excavated or naturally formed. Such term shall include any natural pit, sinkhole, or other feature that is an extension of a cave entrance or which is an integral part of the cave.” (*Federal Cave Resources Protection Act of 1988*).

CAVE COORDINATOR.—An individual with responsibility for managing cave resources. The Forest Coordinator, has forest oversight responsibilities, while the District Cave Coordinator has on-the-ground responsibilities for cave resource management.

CAVE ENTRY PERMIT.—A permit issued to allow entry into a closed cave. See permit copy in the appendix. Usually the permit will allow entry of only six persons at one time.

CAVE RESOURCE.—The term “cave resource” includes any material or substance occurring naturally in caves on Federal lands, such as animal life, plant life, paleontological deposits, speleogens, and speleothems. (*Federal Cave Resources Protection Act of 1988*).

DIRECTED ACCESS CAVE.—A cave with directed public access and developed for public use, and which has been so classified through procedures outlined in this document.

FCRPA.—Federal Cave Resource Protection Act of 1988. This law establishes a Federal mandate to identify, protect, and manage caves on public lands administered by the departments of Agriculture and Interior. May be referred to as the “Act”. (*See copy of act, and discussion, elsewhere in this document.*)

SENSITIVE CAVE.--A cave considered unsuitable for exploration by the general public either because of its pristine condition, unique resources or extreme safety hazards, and which has been so classified through procedures outlined in this document.

SIGNIFICANT CAVE.—The term “significant cave” means a cave located on Federal lands that has been evaluated by the authorized officer and determined to contain biotic, cultural, mineralogical, paleontologic, geologic, hydrologic, or other resources that have important values for scientific, educational or recreational purposes.

SPELEOGEN.--The term “speleogen” means relief features on the walls, ceiling, and floor of any cave or lava tube, which are part of the surrounding bedrock, including but not limited to anastomoses, scallops, meander niches, petromorphs, and rock pendants in solution caves, and similar features unique to volcanic caves. (*Federal Cave Resources Protection Act of 1988*)

SPELEOTHEM.--The term “speleothem” means any natural mineral formation or deposit occurring in a cave or lava tube, including but not limited to any stalactite, stalagmite, helectite, cave flower, flowstone, concretion, drapery, rimstone, or formation of clay or mud. (*Federal Cave Resources Protection Act of 1988*)

UNDEVELOPED CAVE.--A cave that is undeveloped but otherwise suitable for exploration by persons who are properly prepared. A cave which has been so classified through procedures outlined in this document.

COMPLIANCE WITH THE FEDERAL CAVE RESOURCES PROTECTION ACT

The Federal Cave Resources Protection Act of 1988 (FCRPA) makes it “the policy of the United States that Federal lands be managed in a manner which protects and maintains, to the extent practical, significant caves.” No attempt is made here to replicate all the requirements of the FCRPA nor the implementation regulations. Both the Act and regulations (36 CFR 290) are included as appendices. Discussed are specific actions which will be undertaken by the Gifford Pinchot National Forest to comply with existing laws, regulations and policies.

CONFIDENTIALITY

The Act discusses the handling of confidential information concerning the nature and location of significant caves. In general, information concerning the specific location of any significant cave may not be made available to the public under Section 552 of Title 5, United States Code (Freedom of Information Act), unless the Secretary of Agriculture determines that disclosure of such information would further the purposes of the Act and would not create a substantial risk of harm, theft, or destruction of a significant cave.

Specific information concerning significant caves on the Gifford Pinchot National Forest will not be made available to the public (36 CFR §290.4). This information will be treated as confidential and secured in such a manner as to prevent access by non-authorized individuals. The cave coordinator will maintain the cave files and ensure that access is provided on a need-to-know basis only. Information concerning significant caves may be made available only under the conditions noted in the preceding paragraph. Information concerning Class 2, Directed Access Caves, may be made available to the public without further analysis.

DETERMINATION OF SIGNIFICANCE

The implementation regulations establish rules for determination of cave significance (36 CFR §290.3). All caves on the Forest will be evaluated using these criteria, and a determination of significance will be made for each. To be found significant, a cave must possess values in one or more of the following categories: Biota, Cultural, Geologic/Mineralogic/Paleontologic, Hydrologic, Educational or Scientific. Any cave located within a special management area, designated wholly or in part due to cave resources found therein, shall also be determined significant. This last category includes such areas as national monuments, special areas, research natural areas, or other areas of special interest.

Caves determined to be significant will be governed under provisions of the FCRPA. Caves not determined significant will be managed under the standards and guidelines of the Gifford Pinchot National Forest Land and Resource Management Plan, and FSM 2356, and 36-CFR; §261-PROHABITIONS.

PURPOSES OF THE FCRPA

The FCRPA has two purposes. The first is "to secure, protect, and preserve significant caves on Federal lands for the perpetual use, enjoyment and benefit of all people." This first purpose is met through the analysis and implementation of this management plan. Caves with special resource values will be protected, while those which are capable of withstanding recreational use will be either developed for directed access or remain open for "wild caving."

The second purpose of the Act is "to foster increased cooperation and exchange of information between governmental authorities and those who utilize caves located on Federal lands for scientific, educational, or recreational purposes." The Forest will invite the "caving community" to participate in various aspects of cave management. The Forest Service has a national memorandum of understanding with the National Speleological Society for cooperation in matters relating to caves.

Every effort will be made to involve caving organizations, educational institutions, and other interested governmental authorities in management of caves on the Forest. This will be accomplished through MOU's, volunteer, challenge cost share, interagency, and participating agreements, or other actions consistent with the FCRPA, FSM 2356, and the Standards and Guidelines from the Gifford Pinchot National Forest Land and Resource Management Plan.

COLLECTION OR REMOVAL OF CAVE RESOURCES

The Act authorizes the Secretary of Agriculture to issue permits for the collection and removal of cave resources under such terms and conditions as the Secretary may impose, including the posting of bonds to ensure compliance with the provisions of any permit. Specific guidelines are found for the issuance of such permits in the Act.

The Act further states "any person who, without prior authorization from the Secretary, knowingly destroys, disturbs, defaces, mars, alters, removes or harms any significant cave or alters the free movement of any animal or plant life into or out of any significant cave located on Federal Lands, or enters any significant cave located on Federal lands with the intention of committing any act described in this paragraph shall be punished..." The act goes on to describe specific punishment and sets civil penalties.

The Forest will comply with the Act by requiring permits for any collection of cave resources or when studies are proposed that could adversely impact cave resources. (See definition of Cave Resources in the FCRPA, in appendix.)

Permits will be issued only when it has been determined that collections or studies will not create long-term impacts to cave resources. All permits will be issued with the provision that a copy of the study results is provided to the Forest Service. All permits shall require assurance from the permittee that the locations of significant caves will remain confidential. Permits will only be issued when it has been determined that the proposed activities are consistent with the FCRPA, FSM direction, and are within Forest Plan Standards and Guidelines.

Collection permits will be issued for scientific research purposes only. No permits will be issued for removal of cave resources intended for personal collections or for purposes unlikely to generate new contributions of scientific knowledge or understanding of Forest Service caves.

CAVE MANAGEMENT ACTIONS

CAVE INVENTORIES

More than 200 caves are expected to be found on the Gifford Pinchot National Forest. Each of these caves will be assigned a unique cave inventory number, and a brass cave inventory cap will be placed at each entrance. The brass caps provide a permanent identification marker at each cave entrance and allow a distinction to be made between known and newly discovered caves. In the past, some caves were discovered and named by different people at different times, leading to multiple cave names. Marking the caves eliminates any confusion and establishes a permanent identity for each cave.

Cave numbers will be assigned to each cave entrance. Caves with multiple entrances will bear the same number at each entrance, followed by alpha characters (A, B, C, etc.) to differentiate between individual entrances. Cave numbers are assigned by Region, Forest, and Unit, followed by consecutive numbers for each cave on the Unit. For example, the number assigned to the lower entrance of Ape Cave is No. 631-1A.

6 = Region - 6
3 = Gifford Pinchot National Forest (Forest 3)
1 = Mount St. Helens NVM (Unit 1)
-1 = Cave No. 1 on the Unit
A = First Entrance of Ape Cave.

Forest Service cave numbering system. These numbers appear on all cave marker caps, and cave records.

Brass cave inventory caps, stamped with the cave number, will be grouted into a drill hole at each entrance. The caps will be placed in obvious, easily found locations. Care will be taken when placing the markers to avoid locations which would unnecessarily impact the aesthetics of the cave or cause resource damage. Experience has shown, however, that after one or two seasons the markers acquire a dark patina which blends well with rock color. They must, therefore, be placed in locations which will be obvious to anyone approaching the entrance.

RECORDS

On each management unit with caves, a file of permanent data will be maintained for each cave. This file will remain locked, with access provided on a need-to-know basis only. At a minimum, the following information will be collected and maintained for each cave:

Cave Name	Township
Cave Number (entrance number)	Range
Determination of Significance	Section
Date Marker Cap Set	Quadrant
Cave Length	Cave Classification
Latitude	Special Management Concerns
Longitude	Alternate Cave Names
Elevation	Descriptive Notes
	Cave Map

Information to be maintained as a part of each cave file.

In addition to the above information, photographs, scientific reports, copies of newspaper clippings, or other printed materials relating to a specific cave should be included in the file. (*See copy of cave inventory form in appendix.*)

NAMING OF CAVES

Caves are named in a variety of ways. Traditional names, those in popular use by residents of an area, are the first choice when assembling inventory data. It is traditional for the discoverer, or the person to publish the first account or map of a cave, to name the cave. This privilege is drawn mostly from the need to distinguish a newly discovered cave from others in an area. Published accounts are especially important for establishing a cave's early history, its discovery, and naming. It is common for caves to be discovered independently many times before a published account establishes a name. The earliest published name is the one which should be used. A listing of all names applied to a single cave should be recorded in the cave file as an historical reference.

Confusion often arises when naming individual segments of lava tube caves. Distinction between individual lava tube caves is complicated by progressive collapse creating new openings to, or segmenting, known caves. For example, the usual type of opening, a collapse, often creates more than one opening and the question arises: is the sink part of a single cave, or does it separate two caves? The International Union of Speleology has suggested a partial resolution: "If the sink's largest dimension measured horizontally exceeds its depth, the tube is segmented, resulting in multiple caves. All parts of a segment which can be traversed by an individual, without passing through a segmenting sink, constitute a single cave." (IUS, 1979)

If a new name is to be applied to a cave there are two rules which should be followed. First, never name a cave after a living person. Secondly, never name a cave after a geographic feature which discloses the cave's location. If your proposed name passes the test of these two rules, it is an acceptable name. There are many named caves which do not meet these two rules. Those already named should remain as they are.

The State Board of Geographic Names is of little help when establishing cave names, since a very low percentage of cave names are listed; for the State of Washington, under 1%. Providing cave names for listing, along with required location data, may violate the confidentiality provisions of the Federal Cave Resources Protection Act. Cave names will not be submitted to the Board of Geographic Names, except when doing so would further the purposes of the act, and would not jeopardize caves or cave resources by disclosure of location information.

INVENTORIES

The inventory of caves is an ongoing process. As new caves are found, or as additional information comes to light or is collected, the inventory list will grow. The Forest will continue to aggressively pursue collection of inventory data. This will be accomplished mostly through partnerships with caving organizations. Collection of this information will be the responsibility of the Unit cave management coordinator.

CAVE LOCATIONS

Information concerning the location of caves will be kept confidential in accordance with provisions of the FCRPA (FCRPA §5, 36 CFR §290.4, FSM 2356.2 [1]). Only the location of caves classified as "Directed Access" will be made available to the public.

Cave locations recorded in GIS (Geographic Information System) will be placed on a separate, secure layer, and all inventory records will be maintained in a locked file. Access to these records will be permitted on a need-to-know basis only. Generalized information which does not lead to the disclosure of cave locations may be made available if it is determined that such disclosure would not constitute a threat of theft, damage, or harm to cave resources, and is consistent with the purposes of the FCRPA, the implementation regulations, Forest Plan Standards and Guidelines, and FSM 2356.

PARTNERSHIPS

The Forest Service will use partnership agreements (FSM 2356.04d, 2356.4) or volunteers to assist with cave management. The use of volunteers is authorized by the Volunteers in the National Forest Act (16 USC 558), the Federal Cave Resources Protection Act of 1988, and a National Memorandum of Understanding between the USDA Forest Service and the National Speleological Society, dated September 30, 1988. Agreements have been used and will continue to be used for such activities as cave inventory, cave surveying, exploration, monitoring of use, restoration and cleanup, conservation projects, research, cave evaluations, planning, groundwater

tracing, and interpretation.

The Forest Service will actively seek and participate in interagency agreements and partnerships with both Federal, State and private partners, to meet the goals of this management plan. Opportunities for cooperative bat management will be emphasized.

In several cases, partners have provided information to the Forest Service concerning the location of caves. This information will be safeguarded under the confidentiality provisions of the Federal Cave Resources Protection Act. Partners may be given access to certain cave location information during the collection of additional field data or during cave management projects. This information will be made available only when assurances have been provided that such information will be maintained in a confidential manner.

RECREATIONAL USE MONITORING / MANAGEMENT

Recreational use of nearly all caves in the Gifford Pinchot National Forest is taking place. This is an acceptable activity provided there are no irreversible impacts to cave resources. Recreational use monitoring (FSM 2356.06 [9]) of select undeveloped caves will take place through the use of cave registers or electronic counters. The Forest will seek assistance from the National Speleological Society in monitoring projects.

Photo monitoring points will be established in sensitive caves to assess visitor impacts. These photo points will be revisited periodically and new photos will be taken from the same spots. Comparison of photos will be used to determine impacts to the cave and as a help in establishing appropriate use levels.

A brochure will be developed describing the sensitivity of cave resources to disturbance (FSM 2356.2 [1]), cave access policy on the Forest, and precautions explorers should follow to prevent damage to caves. Caving safety and equipment will also be included. The brochure will be developed in partnership with caving organizations.

PROTECTION OF CAVE ENTRANCES

Cave entrances are both sensitive and critical to cave ecosystems. Entrances are a focus of biological activity which contributes nutrients to deep cave organisms. The moderating affect of warm moist cave air creates micro environments in cave entrances which promote growth and occupation by unusual plants and animals. Disruption of this ecosystem by development, or heavy recreational use should be avoided.

Archaeological and paleontological sites are frequently found in cave entrances, particularly beneath vertical drops.

Recreational use, or development of cave entrances may be permitted when it has been determined to be consistent with provisions of the Federal Cave Resources Protection Act. When heavy use is anticipated, narrow pathways should be provided to minimize disturbance. The building of fires in caves will be prohibited. Camping may be permitted when it has been determined to be consistent with protection of cave resources (FSM 2356.03 [1] [6] [7]).

DIGGING IN CAVES

All digging, moving of rocks, or enlargement of passages to allow exploration requires a permit. Permits will be issued only when it has been determined that no damage to cave resources will take place (FSM 2356.3). If formerly closed passages are opened, measures will be taken to maintain former atmospheric conditions through use of airlocks or gates.

Digging should generally be minimal, and waste products disposed of, or graded in a manner specified in the digging permit. Excavations made as a part of scientific investigations will be backfilled and graded to natural contours.

PERMANENT ANCHORS

In vertical caves the use of natural anchors for rigging ropes will be used when possible. Chocks, cams, and slings are acceptable low impact anchoring devices. The use of permanent anchors, such as expansion bolts, will

be set only when approved in advance by the Forest Service. Acceptable reasons to set bolts would be lack of safe natural anchors, directing ropes to avoid loose rocks, reduce rope abrasion, or to protect fragile cave resources.

CLIMBING

Climbing in caves may be allowed when needed to overcome vertical obstacles during exploration.

Sport climbing may be allowed in the vicinity of cave entrances when no risk of damage to cave resources is present (FSM 2356.03 [1] [3]). Climbing must not mar, deface, or leave visible signs of activity having taken place. The use of chalk to dry climbers hands, and which leave marks on handholds, is considered a defacement and will not be permitted.

CLOSED CAVES / CAVE ENTRY PERMITS

All sensitive caves will be closed by order of the Forest Supervisor (FSM 2356.1, 2356.2 [4], 2356.31) and entry allowed by permit only. A sign at the entrance of each sensitive cave will designate it as closed to visitation without a permit, and indicate the address and phone number where permit information may be obtained.

A carrying capacity will be established for each sensitive cave (FSM 2356.1), and allowable uses determined. Permits will be issued only for uses compatible with long-term preservation and protection of cave resources. Except in unusual circumstances, the maximum party size permitted in any sensitive cave will be six persons. A maximum number of visits per month and per year will be established. Each unit will be responsible for issuance of permits for caves under their jurisdiction. (*A copy of the USDA Forest Service Cave Entry Permit may be found in the Appendix.*)

Gates will be used to control access to certain caves. (FSM 2356.2 [5]) When it is determined a gate is required, the gate will be designed and installed to allow free passage of bats, small animals, air and water into or out of the cave. Gates will be constructed using the best designs available and located for maximum wildlife acceptance. (*See drawings of Zero Airflow Reduction Bat Gate in appendix.*)

Certain caves on the Gifford Pinchot National Forest provide critical habitat for Townsends big-eared bat. This bat species uses caves almost exclusively. Due to human disturbance it is decreasing in numbers at an alarming rate. The Eastern subspecies of this bat is listed as an endangered species. Townsend's big-eared bat is listed as a State sensitive species, and is under study by the U.S. Fish and Wildlife Service for listing as a threatened or endangered species. This bat has a low tolerance to disturbance. Recreation use during hibernation or at cave maternity sites can result in death due to starvation, or loss of a season's reproduction as infants are abandoned or knocked to the floor.

Seasonal closure of caves for protection of hibernating bats or bat maternity sites will be used as appropriate. Winter closure will generally be between November 1, through April 15. Summer closure of maternity sites will be from May 15 through September 15. This species generally will not use cold hibernation caves during the summer, or warm maternity caves in the winter. Bat caves may be open to visitor use when bats are not present.

CAVE EVALUATION

All caves on the Gifford Pinchot National Forest will be evaluated using the following rating system. The system assigns values to various cave resources. The assigned values will be used in determining cave classification and in making determinations of cave significance as required by the implementation regulations for the Federal Cave Resources Act of 1988. A cave with a value of "1" or greater, in one or more categories, will cause the cave to be considered significant (*FCRPA Implementation Regulations, 1994*).

Cave Evaluation Guide.

BIOLOGICAL RESOURCES

0	Biological components lacking.
1	Biological components exist but of low apparent significance.
2	Biological components present and numerous, sensitivity low.
3	Biological components present, numerous and of moderate sensitivity.
4	Biological components numerous and sensitive to disturbance.
5	Biological components very numerous and highly sensitive to disturbance or unique species, or ones found on State or Federal sensitive, threatened, or endangered species lists.

HYDROLOGY

0	Hydrologic components lacking.
1	Hydrologic components present but of low importance.
2	Hydrologic components present but of low sensitivity.
3	Hydrologic components present and of moderate sensitivity.
4	Hydrologic components important and very sensitive.
5	Hydrologic components complex and highly sensitive.

RECREATIONAL VALUE

0	Cave lacks recreational value.
1	Recreational value low. Little or no scenic appeal.
2	Recreational value low but receiving some use. Scenic values low.
3	Recreational values, scenic values and use moderate.
4	Recreational values, scenic values and use high.
5	Recreational values, scenic values and use very high. A major cave of regional or National significance.

GEOLOGICAL / MINERALOGICAL / PALEONTOLOGICAL VALUE

0	Features of significance lacking.
1	Some interesting features present.
2	Features present and resistant to disturbance.
3	Features present and of moderate sensitivity to disturbance.
4	Features numerous and of high value. Features sensitive to disturbance.
5	Features rare, valuable, numerous and/or of great sensitivity to disturbance.

EDUCATIONAL OR SCIENTIFIC VALUE

VALUE EXPLANATION OF VALUE

0	Caves lacking educational or scientific value.
1	Caves with low educational or scientific value.
2	Caves with features which can be used for educational or scientific study but are otherwise considered common to the area.
3	Caves which provide opportunity for educational or scientific study.
4	Caves providing unusual opportunity for educational or scientific use.
5	Caves with unique opportunity for interpretation and public education or scientific study.

CULTURAL / HISTORIC VALUE

VALUE EXPLANATION OF VALUE

0	Cultural resources lacking.
1	Potential for cultural resources low.
2	Potential for cultural resources moderate.
3	Cultural resources present or implicated by historic records. Site may be eligible for the National Register of Historic Places.
4	Cultural resources present and sensitive to disturbance. Site eligible for the National Register of Historic Places.
5	Cultural resources present and highly sensitive to disturbance. Site eligible for the National Register of Historic Places.

All caves will be evaluated using the evaluation guide. Values will be used for determination of cave significance as required by the Federal Caver Resources Protection Act (36 CFR 290).

CAVE CLASSIFICATION

Caves will be placed into one of the following classes based on management objectives consistent with identified cave resource values. As new caves are discovered they will be temporarily managed as Class 1 until an analysis of resource values is completed.

CLASS 1, SENSITIVE CAVES.

Caves considered unsuitable for exploration by the general public either because of their pristine condition, unique resources, or extreme safety hazard. They may contain resources that would be impacted by low levels of visitation. These caves are not shown on maps or discussed in publications (such as guides, brochures, or magazines) intended for general public use. Specific management guidelines will be developed for each sensitive cave for the purpose of protecting and maintaining their resources. These caves will be closed by order of the Forest Supervisor, and entry allowed by permit only.

CLASS 2, DIRECTED ACCESS CAVES.

Caves with directed public access and developed for public use. These caves are shown on maps or have signs directing visitor access; frequently they have guided tours and artificial lighting. Regardless of the level of development, public visitation is encouraged. These caves may have sensitive resources that are protected.

CLASS 3, UNDEVELOPED CAVES.

Caves that are undeveloped but are suitable for exploration by persons who are properly prepared. In general, these caves contain resources that resist degradation by moderate levels of recreational use. Public attention will not be directed toward these caves. They will not be shown on maps nor discussed in brochures or publications intended for general public distribution.

STAFFING REQUIREMENTS

In the Forest Headquarters a position of **Forest Cave Coordinator** will be established. This position will have responsibility for coordinating all cave related activities on the Forest. This position will further be responsible for maintaining inventory records of all caves on the forest, coordinate determinations of cave significance, provide expertise to field units concerning cave management, and assure guide lines, policies, plans, and laws pertaining to caves and cave resources are followed. The position will coordinate funding requests from field units, and transmit those requests to appropriate authorities. This position may be shared with the Regional Office to provide cave management direction and assistance to other national forests.

On field units with caves, a **District Cave Coordinator** will be assigned. This position will assume field level responsibility for inventory, evaluation, and management of caves. District Cave Coordinators will manage local activities related to caves, including issuance of cave access permits, research permits, cave gating, record keeping, and monitoring of impacts caused by use or management activities. Other duties and responsibilities may be added to make this a full time position.

PROHIBITIONS

The following acts will be prohibited by order of the Forest Supervisor pursuant to 36 CFR Sec. 261, 262, Subpart B.

Bat Caves, or caves with sensitive species:

261.53 It is prohibited to go into or be upon any area which is closed for the protection of: (a) Threatened, endangered, rare, unique, or vanishing species of plants, animals, birds or fish.

Applicable to all caves:

261.52(a) Building, maintaining, attending, or using a fire, campfire or stove fire.

261.52(c) Smoking

261.58(e) Camping

261.58(s) Possessing a dog or cat.

ATTENTION!

BIG-EARED BAT HIBERNACULUM



CAVE CLOSED NOVEMBER 15 through APRIL 15

This cave is closed to all visitor use during the winter to protect Townsend's Big-eared Bats.

Bats use this cave to survive the winter. Any disturbance during this period can cause abandonment and further decline of the species. Humans within sight or sound of the bats creates sufficient disturbance for abandonment.

By timing your visit in the summer months you will help assure survival of this sensitive species



When caves are closed for protection of bat hibernacula, this sign will be posted in a prominent location at the cave entrance.

LITERATURE CITED

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FEDERAL CAVE RESOURCES PROTECTION ACT OF 1988

Public Law 100-691
100th Congress

An Act

To protect cave resources on Federal lands, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled.

SECTION 1. SHORT TITLE.

This Act may be referred to as the "Federal Cave Resources Protection Act of 1988".

SECT. 2. FINDINGS, PURPOSE, AND POLICY.

(a) Findings.—The congress finds and declares that—

(1) significant caves on Federal lands are an invaluable and irreplaceable part of the Nation's natural heritage; and

(2) in some instances, these significant caves are threatened due to improper use, increased recreational demand, urban spread, and a lack of specific statutory protection.

(b) Purposes.—The purposes of this Act are—

(1) to secure, protect, and preserve significant caves on Federal lands for the perpetual use, enjoyment, and benefit of all people; and

(2) to foster increased cooperation and exchange of information between governmental authorities and those who utilize caves located on Federal lands for scientific, educational, or recreational purposes.

(c) Policy.—It is the policy of the United States that Federal lands be managed in a manner which protects and maintains, to the extent practical, significant caves.

SEC. 3. DEFINITIONS.

For purposes of this Act:

(1) **CAVE.** — The term "cave" means any natu-

rally occurring void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth or within a cliff or ledge (including any cave resource therein, but not including any vug, mine, tunnel, aqueduct, or other manmade excavation) and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or manmade. Such term shall include any natural pit, sinkhole, or other feature which is an extension of the entrance.

(2) **FEDERAL LANDS.** — The term "Federal lands" means lands the fee title to which is owned by the United States and administered by the Secretary of Agriculture or the Secretary of the Interior.

(3) **INDIAN LANDS.** — The term "Indian lands" means lands of Indian tribes or Indian individuals which are either held in trust by the United States for the benefit of an Indian tribe or subject to restriction against alienation imposed by the United States.

(4) **INDIAN TRIBE.** — The term "Indian tribe" means any Indian tribe, band, nation, or other organized group or community of Indians, including any Alaska Native village or regional or village corporation as defined in, or established pursuant to, the Alaska Native Claims settlement Act (43 U.S.C. 1601 et seq.).

(5) **CAVE RESOURCE.** — The term "cave resource" includes any material or substance occurring naturally in caves on Federal lands, such as animal life, plant life, paleontological deposits, sediments, minerals, speleogens, and speleothems.

(6) **SECRETARY.** — The term "Secretary" means the Secretary of Agriculture or the Secretary of the Interior, as appropriate.

(7) **SPELEOTHEM.** — The term "speleo-them" means any natural mineral formation or deposit occurring in a cave or lava tube, including but not limited to any stalactite, stalagmite, helectite, cave flower, flowstone, concretion, drapery, rimstone, or formation of clay or mud.

(8) **SPELEOGEN.** — The term "speleo-gen" means relief features on the walls, ceiling, and floor of any cave or lava tube which are part of the surrounding bedrock, including but not limited to anastomoses, scallops, meander niches, petromorphs and rock pendants in solution caves and similar features unique to volcanic caves.

SEC. 4. MANAGEMENT ACTIONS.

(a) Regulations.—Not later than nine months after the date of the enactment of this Act, the Secretary shall issue such regulations as he deems necessary to

achieve the purposes of this Act. Regulations shall include, but not be limited to, criteria for the identification of significant caves. The Secretaries shall cooperate and consult with one another in preparation of the regulations. To the extent practical, regulations promulgated by the respective Secretaries should be similar.

(b) In General.—The Secretary shall take such actions as may be necessary to further the purposes of this Act. Those actions shall include (but not be limited to)—

(1) identification of significant caves on Federal Lands:

(A) The Secretary shall prepare an initial list of significant caves for lands under his jurisdiction not later than one year after the publication of final regulations using significance criteria defined in such regulations. Such a list shall be developed after consultation with appropriate private sector interests, including cavers.

(B) The initial list of significant caves shall be updated periodically, after consultation with appropriate private sector interests, including cavers. The Secretary shall prescribe by policy or regulation the requirements and process by which the initial list will be updated, including management measures to assure that caves under consideration for the list are protected during the period of consideration. Each cave recommended to the Secretary by interested groups for possible inclusion on the list of significant caves shall be considered by the Secretary according to the requirements prescribed pursuant to this paragraph, and shall be added to the list if the Secretary determines that the cave meets the criteria for significance as defined by the regulations.

(2) regulation or restriction of use of significant caves, as appropriate.

(3) entering into volunteer management agreements with parsons or scientific and recreational caving community; and

(4) appointment of appropriate advisory committees.

(C) PLANNING AND PUBLIC PARTICIPATION.—The Secretary shall—

(1) ensure that significant caves are considered in the preparation or implementation of any land management plan if the preparation or revision of the plan began after the enactment of this Act; and

(2) foster communication, cooperation, and exchange of information between land manag-

ers, those who utilize caves, and the public.

SEC. 5. CONFIDENTIALITY OF INFORMATION CONCERNING NATURE AND LOCATION OF SIGNIFICANT CAVES.

(a) In General.—Information concerning the specific location of any significant cave may not be made available to the public under section 552 of title 5, United States Code, unless the Secretary determines that disclosure of such information would further the purposes of this Act and would not create a substantial risk of harm, theft, or destruction of such cave.

(b) Exceptions.—Notwithstanding subsection (a), the Secretary may make available information regarding significant caves upon the written request by Federal and State governmental agencies or bona fide educational and research institutions. Any such written request shall, at a minimum—

(1) describe the specific site or area for which information is sought;

(2) explain the purpose for which such information is sought; and

(3) include assurances satisfactory to the Secretary that adequate measures are being taken to protect the confidentiality of such information and to ensure the protection of significant cave from destruction by vandalism and unauthorized use.

SECT. 6. COLLECTION AND REMOVAL FROM FEDERAL CAVES.

(a) PERMIT.—The secretary is authorized to issue permits for the collection and removal of cave resources under such terms and conditions at the Secretary may impose, including the posting of bonds to insure compliance with the provisions of any permit:

(1) any permit issued pursuant to this section shall include information concerning the time, scope, location, and specific purpose of the proposed collection, removal or associated activity, and manner in which such collection, removal, or associated activity is to be performed must be provided.

(2) the secretary may issue a permit pursuant to this subsection only if he determines that the proposed collection or removal activities are consistent with the purposes of this Act and with other applicable provisions of law.

(b) REVOCATION OF PERMIT.—Any permit issued under this section shall be revoked by the Secretary upon determination by the Secretary that the permittee has violated any provision of this Act, or has failed to comply with any other condition upon which

the permit was issued. Any such permit shall be revoked by the Secretary upon assessment of a civil penalty against the permittee pursuant to section 8 or upon the permittee's conviction under section 7 of this Act. The Secretary may refuse to issue a permit under this section to any person who has violated any provision of this Act or who has failed to comply with any condition of a prior permit.

(c) **TRANSFERABILITY OF PERMITS.**—Permits issued under this Act are not transferable.

(d) **CAVE RESOURCES LOCATED ON INDIAN LANDS.**—(1)(A) Upon application by an Indian tribe, the Secretary is authorized to delegate to the tribe all authority of the Secretary under this section with respect to issuing and enforcing permits for the collection or removal of any cave resource, or to carrying out activities associated with such collection or removal, from any cave resource located on affected Indian Lands.

(B) In the case of any permit issued by the Secretary for the collection or removal of any cave resource, or to carry out activities associated with such collection or removal, from any cave resource located on Indian lands (other than permits issued pursuant to subparagraph (A)), the permit may be issued only after obtaining the consent of the Indian or Indian tribe owning or having jurisdiction over such lands. The permit shall include such reasonable terms and conditions as may be requested by such Indian or Indian tribe.

(2) If the Secretary determines that issuance of a permit pursuant to this section may result in harm to, or destruction of, any religious or cultural site, the Secretary, prior to issuing such permit, shall notify any Indian tribe which may consider the site as having significant religious or cultural importance. Such notice shall not be deemed a disclosure to the public for purposes of section 5.

(3) A permit shall not be required under this section for the collection or removal of any cave resource located on Indian lands or activities associated with such collection, by the Indian or Indian tribe owning or having jurisdiction over such lands.

(e) **EFFECT OF PERMIT.**—No action specifically authorized by a permit under this section shall be treated as a violation of section 7.

SECT. 7. PROHIBITED ACTS AND CRIMINAL PENALTIES.

(a) **PROHIBITED ACTS.**—

(1) Any person who, without prior authorization from the Secretary knowingly destroys, disturbs, defaces, mars, alters removes or harms any sig-

nificant cave or alters the free movement of any animal or plant life into or out of any significant cave located on Federal lands, or enters a significant cave with the intention of committing any act described in this paragraph shall be punished in accordance with subsection (b).

(2) Any person who possesses, consumes, sells, barter or exchange, or offers for sale, barter or exchange, any cave resource from a significant cave with knowledge or reason to know that such resource was removed from a significant cave located on Federal lands shall be punished in accordance with subsection (b).

(3) Any person who counsels, procures, solicits, or employs any other person to violate any provisions of this subsection shall be punished in accordance with section (b).

(4) Nothing in this section shall be deemed applicable to any person who was in lawful possession of a cave resource from a significant cave prior to the date of enactment of this Act.

(b) **PUNISHMENT.**—

The punishment for violating any provision of subsection (a) shall be imprisonment of not more than one year or a fine in accordance with the applicable provisions of title 18 of the United States Code, or both. In the case of a second or subsequent violation the punishment shall be imprisonment of not more than 3 years or a fine in accordance with the applicable provisions of title 18 of the United States Code, or both.

SECT. 8. CIVIL PENALTIES.

(a) **ASSESSMENT.**—(1) The secretary may issue an order assessing a civil penalty against any person who violates any prohibition contained in this Act, any regulation promulgated pursuant to this act, or any permit issued under this Act. Before issuing such an order, the Secretary shall provide such person written notice and the opportunity to request a hearing on the record within 30 days. Each violation shall be a separate offense, even if such violations occurred at the same time.

(2) The amount of such civil penalty shall be determined by the Secretary taking into account appropriate factors including (A) the seriousness of the violation; (B) the economic benefit (if any) resulting from the violation; (C) any history of such violations; and (D) such other matters as the Secretary deems appropriate. The maximum fine permissible under this section is \$10,000.

(b) **JUDICIAL REVIEW.**— Any person aggrieved by an assessment of a civil penalty under this section may

file a petition for judicial review of such assessment with the United States District Court for the District of Columbia or for the district in which the violation occurred. Such a petition shall be filed within the 30-day period beginning on the date the order assessing the civil penalty was issued.

(c) **COLLECTION.**—If any person fails to pay an assessment of a civil penalty—

(1) within 30 days after the order was issued under subsection (a), or

(2) if the order was appealed within such 30-day period, within 10 days after court has entered a final judgment in favor of the Secretary under subsection (b),

the Secretary will notify the Attorney General and the Attorney General shall bring civil action in an appropriate United States district court to recover the amount of penalty assessed (plus costs, attorney's fees, and interest at currently prevailing rates from the date the order was issued or the date of such final judgment, as the case may be). In such an action, the validity, amount, and appropriateness of such penalty shall not be subject to review.

(d) **SUBPOENAS.**— Title Secretary may issue subpoenas in connection with proceedings under this subsection compelling the attendance and testimony of witnesses and subpoenas duces tecum, and may request the Attorney General to bring an action to enforce any subpoena under this section. The district courts shall have jurisdiction to enforce such subpoenas and impose sanctions.

SECT. 9. MISCELLANEOUS PROVISIONS.

(a) **AUTHORIZATION.**— There are authorized to be appropriated \$100,000 to carry out the purposes of this Act.

(b) **EFFECT ON LAND MANAGEMENT PLANS.**— Nothing in this Act shall require the amendment or revision of any land management plan, the preparation of which began prior to the enactment of this Act.

(c) **FUND.**— Any money collected by the United States as permit fees for collection and removal of cave resources; received by the United States as a result of the forfeiture of a bond or other security by a permittee who does not comply with the requirements of such permit issued under section 7; or collected by the United States by way of civil penalties or criminal fines or violations of this Act shall be placed in a special fund in the Treasury. Such moneys shall be available for obligation or expenditure (to the extent provided for in advance in appropriation Acts) as determined by the Secretary for the improved management, benefit, repair, or restoration of significant caves located on

Federal lands.

(d) Nothing in this Act shall be deemed to affect the full operation of the mining and mineral leasing laws of the United States, or otherwise affect valid existing rights.

SEC. 10. SAVINGS PROVISIONS.

(a) **WATER.**— Nothing in this Act shall be construed as authorizing the appropriation of water by any Federal, State, or local agency, Indian tribe, or any other entity or individual. Nor shall any provision of this Act—

(1) affect the rights or jurisdiction of the United States, the States, Indian tribes, or other entities over waters of any rivers or stream or over any ground water resource;

(2) alter, amend, repeal, interpret, modify, or be in conflict with any interstate compact made by the States; or

(3) alter or establish the respective rights of the States, the United States, Indian tribes, or any person with respect to any water or water-related right.

(b) **FISH AND WILDLIFE.**— Nothing in this Act shall be construed as affecting the jurisdiction or responsibilities of the States with respect to fish and wildlife.

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Approved November 18, 1988.
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LEGISLATIVE HISTORY—H.R. 1975:

HOUSE REPORTS: No 100-534 (Comm. on Interior and Insular Affairs).

SENATE REPORTS: No. 100-559 (Comm. on Energy and Natural Resources).

CONGRESSIONAL RECORD, Vol. 134 (1988)

Mar. 28, considered and passed House.

Oct. 21, considered and passed Senate, amended.
House concurred in Senate amendment.

36 CFR Ch. II (7-1-94 Edition)
Forest Service, USDA

Part 290-CAVE RESOURCES MANAGEMENT

Sec.

- 290.1 Purpose and scope.
- 290.2 Definitions.
- 290.3 Nomination, evaluation, and designation of significant caves.
- 290.4 Confidentiality of cave location information.
- 290.5 Collection of information.

AUTHORITY: 16 U.S.C. 4301-4309; 102 Stat. 4546.

SOURCE: 59 FR 31152, June 17, 1994, Unless otherwise noted.

§290.1 Purpose and Scope.

The rules of this part implement the requirement of the Federal Cave Resources Protection Act (16 U.S.C. 4301-4309), hereafter referred to as the "Act". The rules apply to cave management on National Forest System lands. These rules, in conjunction with rules in part 261 of this chapter, provide the basis for identifying and managing significant caves on National Forest System lands in accordance with the Act. National Forest System lands will be managed in a manner which, to the extent practical, protects and maintains significant cave resources in accordance with the policies outlined in the Forest Service Directive System and the management direction contained in the individual forest plans.

§290.2 Definitions

For the purposes of this part, the terms listed in this section have the following meaning:

Authorized officer means the Forest Service employee delegated the authority to perform the duties described in this part.

Cave means any naturally occurring void, cavity, recess, or system of interconnected passages beneath the surface of the earth or within a cliff or ledge and which is large enough to permit a person to enter, whether the entrance is excavated or naturally

formed. Such term shall include any natural pit, sinkhole, or other opening which is an extension of the cave entrance or which is an integral part of the cave.

Cave resources mean any materials or substances occurring in caves including, but not limited to, biotic, cultural, mineralogic, paleontologic, geologic, and hydrologic resources.

National Forest System lands means all national forest lands reserved or withdrawn from the public domain, acquired through purchase, exchange, or donation, national grasslands and land utilization projects, and other lands, waters, or interests administered by the Forest Service.

Secretary means the Secretary of Agriculture.

Significant cave means a cave located on National Forest System Lands that has been determined to meet the criteria in §290.3 (c) or (d) and has been designated in accordance with §290.3 (e).

§290.3 Nomination, Evaluation, and designation of significant caves.

(a) *Nominations for initial and subsequent listings.* The authorized officer will give governmental agencies and the public, including those who utilize caves for scientific, educational, or recreational purposes, the opportunity to nominate caves. The authorized officer shall give public notice, including a notice published in the FEDERAL REGISTER, calling for nominations for the initial listing and setting forth the procedures for preparing and submitting the nominations. Nominations for subsequent listing will be accepted from governmental agencies and the public by the Forest Supervisor where the cave is located as new cave discoveries are made. Caves nominated but not approved for designation may be renominated as additional documentation or new information becomes available.

(b) *Evaluation for initial and subsequent listings.* The evaluation of the nominations for significant caves will be carried out in consultation with individuals and organizations interested in the management and use of caves and cave resources, within the limits imposed by the confidentiality provisions of §290.3 (c) and (d).

(c) *Criteria for significant caves.* A significant cave on National Forest System lands shall possess one or more of the following features, characteristics, or values.

(1) *Biota*. The cave provides seasonal or yearlong habitat for organisms or animals, or contains species or sub-species of flora or fauna native to caves, or are sensitive to disturbance, or are found on State or Federal sensitive, threatened, or endangered species lists.

(2) *Cultural*. The cave contains historic properties or archaeological resources (as defined in Parts 800.2 and 296.3 of this chapter respectively, or in 16 U.S.C. 420, *et seq.*) or other features included in or eligible for inclusion on the National Register of Historic Places because of their research importance for history or prehistory, historical associations, or other historical or traditional significance.

(3) *Geologic/Mineralogic/Paleontologic*. The cave possesses one or more of the following features:

(i) Geologic or mineralogic features that are fragile, represent formation processes that are of scientific interest, or that are otherwise useful for study.

(ii) Deposits of sediments or features useful for evaluating past events.

(iii) Paleontologic resources with potential to contribute useful educational or scientific information.

(4) *Hydrologic*. The cave is a part of a hydrologic system or contains water which is important to humans, biota, or development of cave resources.

(5) *Recreational*. The cave provides or could provide recreational opportunities or scenic values.

(6) *Educational or scientific*. The cave offers opportunities for educational or scientific use; or, the cave is virtually in a pristine state, lacking evidence of contemporary human disturbance or impact; or, the length, volume, total depth, pit depth, height, or similar measurements are notable.

(d) *Specially designated areas*. All caves located within special management areas, such as Special Geologic Areas, Research Natural Areas, or National Monuments, that are designated wholly or in part due to cave resources found therein are determined to be significant.

(e) *Designation and documentation*. If the authorized officer determines that a cave nominated and evaluated under paragraphs (a) and (b) of this section meets one or more of the criteria in paragraph (c) of this section, the authorized officer shall designate the cave as significant. The authorized officer will notify the nominating party of the results of the evaluation and designation. Each forest will retain appropriate documentation for all significant caves located within its administrative boundaries. At a minimum, this documentation shall include a statement of finding signed and dated by the authorized officer and the information used to make the determination. This documentation will be retained as a permanent record in accordance with the confidentiality provision in §290.4.

(f) *Undiscovered Passages*. If a cave is determined to be significant, its entire extent on federal land, including passages not mapped or discovered at the time of determination, is deemed significant. This includes caves that extend from lands managed by any other Federal agency into National Forest System land, as well as caves initially believed to be separate for which interconnecting passages are discovered after significance is determined.

(g) *Decision Final*. The decision to designate or not designate a cave as significant is made at the sole discretion of the authorized officer based upon the criteria in paragraphs (c) and (d) of this section and is not subject to further administrative review of appeal under Parts 217 or 251.82 of this chapter.

§290.4 Confidentiality of cave location information.

(a) *Information disclosure*. No Forest Service employee shall disclose any information that could be used to determine the location of a significant cave or a cave nominated for designation, unless the authorized officer determines that disclosure will further the purposes of the Act and will not create a substantial risk of harm, theft, or destruction to cave resources.

(b) *Requesting confidential information*. Notwithstanding paragraph (a) of this section, the authorized officer may make confidential cave information available to Federal or State governmental agencies, bona fide educational or research institutes, or individuals or organizations assisting the land management agencies with cave management activities. To request confidential cave information, such entities shall make

a written request to the authorized officer which includes the following:

(1) Name, address, and telephone number of the individual responsible for the security of the information received;

(2) A legal description of the area for which the information is sought;

(3) A statement of the purpose for which the information is sought; and,

(4) Written assurances that the requesting party will maintain the confidentiality of the information and protect the cave and its resources.

(c) Decision Final. The decision to permit or deny access to confidential cave information is made at the sole discretion of the authorized officer and is not subject to further administrative review or appeal under 5 U.S.C. 552 or parts 217 or 251.82 of this chapter.

§290.5 Collection of information.

The collection of information contained in this rule represents new information requirements as defined in 5 CFR 1320, Controlling Paperwork Burdens on the Public. In accordance with those rules and the Paperwork Reduction Act of 1980 as amended (44 U.S.C. 3507), the Forest Service has received approval by the Office of Management and Budget to collect cave nomination information under clearance number 0596-0123 and confidential information under 0596-00122. The information provided for the cave nomination will be used to determine which caves will be listed as "significant" and the information in the requests to obtain confidential cave information will be used to decide whether to grant access to this information. Response to the call for cave nominations is voluntary. No action may be taken against a person for refusing to supply the information requested. Response to the information requirements for obtaining confidential cave information is required to obtain a benefit in accordance with section 5 of the Federal Cave Resources Protection Act of 1988 (16 U.S.C. 4304).

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
GIFFORD PINCHOT NATIONAL FOREST

CAVE ENTRY PERMIT

Permission is hereby granted to enter the following sensitive cave:

_____ (Cave Name) _____ (Date) _____ (Cave Number) _____ (Key Number)

The group leader (18 years old minimum) will sign below in the first space, and will accompany the group at all times. The group leader will assume responsibility for actions of the group.

Your signature indicates you have read and understand all conditions of this permit.

Name and Telephone Number	Age	Complete Mailing Address
1. _____ Trip Leader	_____	_____
_____	_____	_____
2. _____	_____	_____
_____	_____	_____
3. _____	_____	_____
_____	_____	_____
4. _____	_____	_____
_____	_____	_____
5. _____	_____	_____
_____	_____	_____
6. _____	_____	_____
_____	_____	_____

Name and Telephone Number

On trips into caves where larger groups are permitted, list additional names and addresses under "comments" on the back of this permit.

Please return this permit, and any cave gate keys, to the Forest Service office from which they were issued.

IN CASE OF EMERGENCY CONTACT:

This permit authorizes the permittee to enter and explore the cave indicated on the reverse side of this permit. Persons signing this permit accept responsibility for informing themselves of the inherent dangers of exploring undeveloped caves, accept full responsibility for their conduct, and personal safety. The permittees shall save harmless the Federal Government and its employees, for any mental or physical injury or damages resulting from entering or exploring the above cave, and that the Federal Government assumes no responsibility therefor.

Removal or destruction of any natural formations, minerals, rocks, or artifacts in or near caves on the Gifford Pinchot National Forest is prohibited. Strict adherence to all rules and regulations stated on this form is understood and agreed to.

Conditions of this Permit:

1. This permit is valid only on the date specified for cave entry.
2. This permit must be returned, even if canceling the trip.
3. The permittee copy must be in your possession while visiting the cave. All party members must sign their names, provide a phone number, and address on the permittee copy before entering the cave. this permit is valid only for those listed on the permit.
4. The group leader must be over 18 years of age and be in accompaniment of the group at all times.
5. The minimum number allowed on the trip is three (3).
6. The maximum number of people allowed on a trip is six (6) unless special permission is obtained.
7. Each person shall carry three (3) separate sources of light, a hard hat, and non-skid footwear.
8. For your safety please leave the gate key in a safe location just inside the gate, known to all members of your party.
9. The trip leader is responsible for replacing the lock and gate at the end of the cave trip.
10. All materials carried into the cave by the group must be removed and properly disposed of. The disposal of any human waste within caves is prohibited.
11. The permittee agrees that information concerning the location of this sensitive cave will not be dispersed, published, duplicated, or in any other way disseminated, unless permission is first obtained from the Forest Service. Dissemination of cave location information can lead to vandalism or destruction of cave resources.
12. Failure to comply with any of the above requirement may result in curtailment of future cave access privileges.

NOTICE: If you find a gate broken, please do not enter the cave, even though you have a valid permit. Entering the cave may destroy evidence needed by investigators. Notify the Forest Service of any evidence of forced entry, or if you notice damage to cave resources.

If you find anyone doing damage to a cave, please get all possible information (names, times, vehicle descriptions, license numbers, etc.) and report the incident to the forest Service as soon as possible.

Under "Comments" below, please report any gates which are unlocked, have missing locks, or have locks in poor condition. Report any damage noticed in the cave.

Comments: _____

SIGNIFICANT CAVE NOMINATION WORKSHEET

PLEASE REFER TO INSTRUCTIONS BEFORE FILLING OUT THIS WORKSHEET

APPROVED
USDI OMB NO. 1004-0165
Expires: July 31, 1996
USDA OMB NO. 0596-0123
Expires: July 31, 1995

A. Application Information

Person or Organization Submitting this Nomination:

Name: _____

Address _____
(Street) (City) (State and Zip Code)

Telephone No. _____ Date _____

Person to contact for additional information:

Name _____ Telephone No. _____

B. Nomination Information

1. Cave Name (s) _____

2. Cave Location: State Washington County _____ Cave No. _____

Township _____ Range _____ Section _____ Quadrant _____

Latitude _____ Longitude _____ Elevation _____ Cave Length _____

Special Management: _____

3. Topographic Map Enclosed ☐ Yes ☐ No

4. Cave Map Enclosed ☐ Yes ☐ No

5. Adminstrating Federal agency: _____

6. Local field unit where cave is located _____

7. Description of Cave _____

(Continue on reverse)

C. Significant Cave Criteria Information

1. Biota

The cave provides seasonal or yearlong habitat for organisms or animals or contains species or subspecies of flora or fauna native to caves, or are sensitive to disruption, or are found on State or Federal sensitive, threatened, or endangered species lists.

☐ Yes ☐ No Description:

2. Cultural:

The cave contains historic properties or archaeological resources or other features that are included in or eligible for inclusion in the National Register of Historic Places because of its research importance for history or prehistory, its historical associations, or other historical or traditional significance

☐ Yes ☐ No Description:

3. Geologic/Mineralogic/Paleontologic:

The cave possesses one or more of the following features: (1) Geologic or mineralogic features that are fragile, or exhibit interesting formation processes, or that are otherwise useful for study; (2) Deposits of sediments or features useful for evaluating past events; (3) Paleontological resources with potential to contribute useful educational or scientific information

☐ Yes ☐ No Description:

4. Hydrologic:

The cave is part of a hydrologic system or contains water that is important to humans, biota, or development of cave resources

☐ Yes ☐ No Description:

5. Recreational:

The cave provides or could provide recreational opportunities or scenic values

☐ Yes ☐ No Description:

6. Educational or Scientific:

The Cave offers opportunities for educational or scientific use; or, the cave is virtually in a pristine state, lacking evidence of contemporary human disturbance or impact; or, the length, volume, total pit depth, height, or similar measurements are notable.

☐ Yes ☐ No Description:

MOUNT ST. HELENS CAVE INVENTORY

Cave Name LITTLE RED RIVER CAVE		Cave No. 631-23		Cap Set 06/25/92		Cave Length 3865	
Township T.8 N.	Range R.4 E.	Quadrant NW 1/4, SE 1/4	Section 32	Elevation 2370	Latitude	Longitude	Other Names
Classification Class 1		Special Management Considerations Unique, vulnerable invertebrates, increasing visitor use; new gate needed; access permit.					
<p>Notes</p> <p>This cave was discovered September 15, 1960, by Bill Reese, Bob Kitch, and Gene McCune while cave-hunting. The cave is mostly a unitary lava tube, terminating in a lake, that although shallower, is larger than that of Lake Cave. The unusual name of this cave is due to a redish staining on the bed of the cave stream.</p> <p>The cave has a vertically complex structure near the entrance, which combined with the effects of past mudflow invasion creates a series of vertical drops, slopes, and sand floored passages. Two lava falls are present midway in the cave where the floor drops away for a total descent of about 80 vertical feet. Erosional side passages enter the tube where segments of wall lining has fallen away exposing the pre-flow land surface. A significant amount of sediment has entered the cave in some areas. The cave stream arises from cracks in the walls and floor, starting about 500 feet from the end of the cave; stream flow is perennial.</p> <p>The stream and lake comprise the most important cave invertebrate habitat in the Cave Basalt, with four stygobiont (obligate subterranean) species, three of them unique to this locality. Terrestrial habitats in this cave are also important and vulnerable. Slime is well-developed throughout, with high populations of Speolepta. There is a moderate amount of broken floor and average populations of troglobitic campodeids. The rare troglobitic mite Elliotta occurs here, as well as another troglobitic mite species found elsewhere only in Spider Cave. This cave is at high risk from habitat trampling, pollution and littering by uninformed visitors.</p> <p>This cave is the third most visited cave in the Monument following Ape and Lake caves. Visitor use is not directed toward this cave, and in fact the cave has been gated since 1967. This gate, because it can be lifted off its hinges, is ineffective in controlling access. Visitation is increasing. The gate is constructed of welded rebar which forms a pattern difficult for bats to pass through.</p> <p>The existing gate needs to be removed and replaced with an Air-flow bat gate. Old ladders and poles should be removed and the cave returned to a natural condition. Access should be allowed by permit only, and limited to six people per day. Anyone visiting the cave must agree to leave the cave as they found it and be informed of the sensitivity of the habitat. Signing located on the cave wall, inside the gate, should indicate the access rules, and how permission may be obtained for entry.</p>							

FOREST SERVICE MANUAL WASHINGTON

(WO AMENDMENT 2300-91-3
EFFECTIVE 3/12/91)

TITLE 2300 - RECREATION, WILDERNESS, AND RELATED RESOURCE MANAGEMENT

2356 - CAVE MANAGEMENT. Caves are dynamic natural systems affected by surface and subterranean environmental changes.

While similar in many respects to surface resources, cave resources present some unusual management challenges because of the nonrenewable nature of cave contents and the sensitivity of cave ecosystems to man-caused changes.

2356.01 - Authorities. Principal laws and regulations effecting management of National Forest Caves.

1. The Organic Administration Act of June 4, 1897. (16 U.S.C. 551). This Act authorizes the Secretary of Agriculture to Regulate occupancy and use of the National Forests. Regulations issued under the Act authorize protection of cave resources from theft and destruction (36 CFR 261a, 9b, 9g, and 9h). Under 36 CFR 294.1, classification is authorized for special interest areas that are managed for recreation use substantially in their natural condition. Special closures are authorized under 36 CFR 261.53 to protect threatened cave resources.

2. Antiquities Act of 1906 (34 Stat. 225; 16 U.S.C. 431 et seq.). This act provides for the protection of historic or prehistoric remains or any object of antiquity on Federal land. Criminal sanctions are authorized for destruction or appropriation of antiquities. Scientific investigations of antiquities on Federal lands are permissible subject to permit and regulations. Uniform rules and regulations pursuant to this Act are in FSM 1530.12.

3. Archaeological Resources Protection Act (ARPA) October 31, 1979 (16 U.S.C. 470aa). This act clarifies and defines "archaeological resources," prohibits the removal, sale, receipt, and interstate transport of archaeological resources obtained illegally from public lands. The act authorizes confidentiality of site location information, authorizes permit procedures to enable study and investigation of archeological resources on public lands by qualified individuals; provides for substantial criminal and civil penalties, forfeiture of equipment used in the crime, and rewards for citizens who report the crime. The act supplements but does not replace the Antiquities Act of 1906.

4. Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531). The act describes the process for determining endangered and threatened species, establishes prohibited acts, prescribes penalties, mandates a recovery plan, and defines interagency and State cooperative relationship requirements.

2356.02 - Objectives. Provide cave related recreational, cultural, educational, and scientific study opportunities that serve public needs. Balance surface resource management and cave use with the protection of cave values.

2356.03 - Policy.

1. Manage caves as a nonrenewable resource to maintain their geological, scenic, educational, cultural, biological, hydrological, paleontological, and recreational values.

2. Classify caves containing outstanding values as Geological or Historical Areas (FSM 2372).

3. Emphasize wild cave management with few or no facilities to aid or facilitate use.

4. Develop management prescriptions for caves of significant value.

5. Coordinate surface and cave resource management activities.

6. Protect threatened, endangered, proposed and sensitive, species in accordance with the Endangered Species Act (16 U.S.C. 1531) and FSM 2670.

7. Protect cultural sites and deposits in accordance with FSM 2361.03.

8. Develop and foster communications, cooperation, and volunteerism with interested publics, Federal agencies, States and local governments.

2356.04 - Responsibilities.

2356.04a - Deputy Chief for National Forest Systems. The deputy chief for National Forest Systems approves Memorandums of Understanding with national organizations and agencies for cooperative cave management programs.

2356.04b - Director, Recreation Management, Washington Office The director, Recreation Management Staff, WO:

1. Provides leadership through development and implementation of a

cave management policy.

2. Coordinates cave management policy with Director of Minerals and Geology Management and the Director of Wildlife and Fish.

2356.04c - Regional Forester. Regional Foresters approve special area designations and implementation plans.

2356.04d - Forest Supervisor. Forest Supervisors:

1. Approve Memorandums of Understanding for cooperative cave management activities with local organizations.

2. Incorporate cave management prescriptions in the Forest Land Management Plan.

2356.05 - Definitions.

1. Cave. Any naturally formed void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth or within a cliff or ledge, including natural subsurface water and drainage systems, which is large enough to permit a person to enter, whether or not the entrance is naturally formed or manmade. The term "cave" shall also include any natural pit, sinkhole, or other feature which is an extension or component of a cave.

2. Cave Life. All life forms, including plants and vertebrate or invertebrate animals endemic to caves or which commonly use caves during the completion of their life cycles.

3. Cave Resource. The cave itself and any material occurring naturally in caves, including sediments, paleontological deposits, minerals, speleothems, water, cave life and other natural resources.

4. Developed Cave. Any cave or cave site that has been developed for the benefit of the public. This includes items such as construction or improvement of access roads, parking areas, sewage and sanitary facilities, trails, safety barriers, interpretive displays, and other similar features designed for public use.

5. Hydrological Setting. All natural components of a particular hydrological system, including areas of recharge, drainages, watersheds, regional movement of water through a particular geographical and topographical area, and the related structural components and geological formations through which it moves or by which it is controlled.

6. Sensitive Cave. A cave containing resources which have significant values that can be easily damaged, disturbed, or destroyed.

7. Wild or Undeveloped Cave As contrasted to a developed cave, lacks developments which facilitate public use. Trails are user developed or nonexistent; parking, sanitation, interpretive displays are lacking.

2356.06 - References.

1. "Spelean Inventory and Evaluation System" by Jim Nieland and Jer Thorton. American Cave Conservation Association, Cave Management Series Volume 1, Number 1, December 1985.

2356.1 - Planning.

1. Incorporate cave management activities, considerations, and prescriptions in Forest Plans.

2. Acquire and inventory data needed to manage cave resources. Use the inventory and evaluation procedures in "Spelean Inventory and Evaluation System" (FSM 2356.06) or an equivalent inventory and evaluation procedure.

3. Utilize multi-discipline teams to acquire needed inventory data.

4. Establish appropriate cave use limits.

5. Prescribe techniques to control cave use. Manage use to the minimum extent needed to accomplish management objectives.

Regulation techniques include user education, information dissemination, access facility (roads and trails) management, permit system (FSM 2720), and physical barriers.

6. Avoid locating facilities, such as roads, trails, parking lots, sanitation, chemical and fuel storage, where they pose a threat to cave resources and users.

7. Where appropriate, incorporate education and interpretive programs into cave management prescriptions. Use these activities to take advantage of recreation opportunities, minimize use impacts, and help solve management problems.

8. Biotic communities are generally the most sensitive and easily damaged cave resources. Give priority to protection of these communities during planning and management.

9. Establish monitoring activities as needed to assess changes in the cave environment.

2356.11 - Developing Caves. A few caves may be of sufficient interest and significance to warrant consideration for development. Forest planning

should identify caves for development and prescribe general extent of development.

2356.11a - Caves unsuited for Development Caves having the following conditions are generally not suited for development. Caves that:

1. Provide habitat for endangered, threatened, proposed or sensitive species (FSM 2670).
2. Contain delicate formations and deposits or cultural resources that cannot be adequately protected.
3. Are the sites of ongoing scientific studies or have opportunities for scientific studies not found elsewhere.
4. Require special spelunking skills or equipment for access and use.
5. Contain natural hazards, such as bad air, flooding potential, or unstable conditions.

2356.11b - Cave Development Plan Prepare a development plan for any cave identified for development. The plan must give priority consideration to protection of cave values. The plan should address the following items:

1. Development objectives.
2. Analysis of anticipated use.
3. Access road and parking area location.
4. Sanitation and sewage disposal placement.
5. water quality, quantity, and hydrological settings.
6. visual quality.
7. Trail placement and design.
8. Cave weather (temperature, humidity, air flow, and quality).
9. Protection of sensitive features, biotic and abiotic.
10. Lighting design.
11. Use control.
12. Use limits.

- 13 Interpretive programs.
15. Development maintenance and operation, including concessions (FSM 2343).
16. Surface and underground management relationships.

2356.2 - Management.

1. Publish and distribute information on cave management to direct use to suitable caves and as an educational tool to reduce use impacts. Also use information to increase public awareness and sensitivity to cave resource values.

Limit distribution of information to the public where such information might result in conflict with cave management objectives.

Insure cooperators understand the laws governing public access to government information.

As a rule, cave information is available to the public under the Freedom of Information Act. However, cultural resources and threatened and endangered species data may be exempted from release (FSM 6270).

2. Work with organizations and members of the caving community when establishing regulations.

3. Use trails within the cave to direct use through or around sensitive areas.

4. Use full seasonal or partial closures to protect sensitive wildlife during critical periods in the year. Where possible, use public education and interpretation or marked trails to reduce the need for closures.

5. Regulate use with a gate as a last resort. If a gate is used, ensure that it allows natural movement of air, water, wildlife, and other biota in and out of the cave. design and install the barrier in a manner to minimize the possibility of breaking and entry by unauthorized persons.

6. Use law enforcement as required to protect users and cave values.

7. Obtain water rights where needed to maintain minimum stream flows.

2356.3 - Coordination With Other Resources Uses Cave environments are dynamic and closely linked to surface environment and surface activities. This linkage generally occurs through the movement of air, water, plants,

insects, and other animals into and out of caves. Altering these movements, or the nature of the material being moved, can cause undesirable changes in the cave environment. The importance of changes is dependent upon the nature of the cave and what cave resources are involved. Some important considerations are:

1. Vegetation manipulation in and around cave entrances and within the hydrological setting for the cave.

2. Activities which would alter entrances or create new entrances affecting air flow, temperature, humidity, and movement of materials in and out of the cave.

3. Introduction of pesticides, herbicides, fertilizers, and other deleterious materials either directly into the cave or indirectly through the cave's hydrological setting.

4. Changes in water quality and quantity. Pollution of underground waters by septic systems, landfills, and leaking underground tanks can spread quickly throughout the underground watershed to pollute domestic water supplies and impact cave biota (FSM 2880).

5. Construction of surface facilities such as roads, pipelines, buildings, parking areas, and storage facilities for volatile, toxic and other environmentally harmful materials.

6. Extraction of minerals and other materials (2800).

7. Activities affecting the food chain and critical habitat of cave life.

8. Runoff water from roads and parking areas.

9. Blocking or changing natural water percolation due to compaction, paving, or vegetative management.

10. Activities affecting the air quality of the cave.

2356.31 - Public Safety and Public Information Inform the public of the general hazards associated with cave exploration and any particular hazards which a reasonably prudent person might not otherwise be aware.

Use the following warning in general maps and literature if there are caves open to public use by permit or otherwise.

"Caves may pose special dangers to visitors due to flooding, falling rocks, and other hazards which may require special skills and equipment. Cave visitors are responsible for their own safety and should take precau-

tions to learn safety procedures and utilize proper equipment."

Use this warning on any special-use permit issued for cave users (FSM 2721.430).

Where special dangers are known to exist in a cave, efforts should be made to warn visitors in advance either through written warnings, in maps and guidebooks, on permits, or by signs posted at entry points.

This is particularly important when the danger is not readily apparent or the user and a reasonably prudent person might not otherwise be prepared.

2356.4 - Volunteers.

Encourage volunteer involvement for projects such as cave mapping, inventorying, planning, monitoring use, guiding, and interpretation through development of adopt-a-cave programs, volunteer agreements, and memoranda of understanding.

2356.5 - Cooperation.

Utilize natural history associations to provide visitor services such as guides, lights, and educational materials.

Cooperate with local law enforcement agencies and caving volunteers to develop and maintain search and rescue contingency plans. Jointly publicize contacts for emergency use. As a rule, rely upon local law enforcement agencies to provide search and rescue leadership.

2356.6 - Research. Promote research activities by qualified persons or institutions to increase knowledge and improve management. Review research proposals to prevent long-term adverse impacts upon the cave resources.

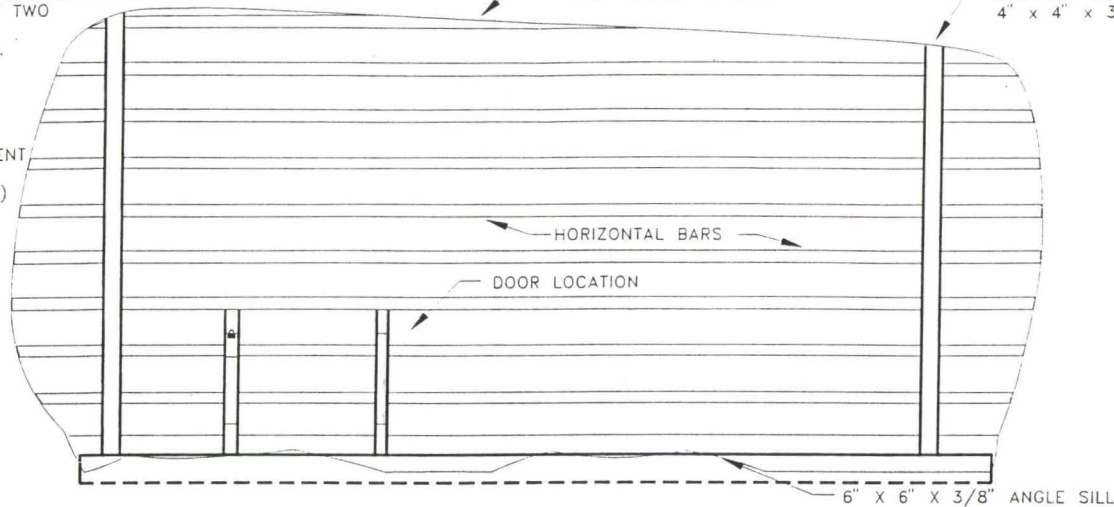
SUPPORT COLUMNS SHALL BE PLACED 10' APART, IF THE OPENING IS LARGE ENOUGH.

SMALL OPENINGS SHALL HAVE AT LEAST TWO SUPPORT COLUMNS.

NOTE:
SEE END
ATTACHMENT
DETAIL,
(SHEET 4)

BAR FASTENED TO ROOF USING
STEEL PLATE PINNED TO ROOF
AND WELDED TO BAR.

SUPPORT COLUMNS
4" x 4" x 3/8"



TYPICAL BAT GATE BACK ELEVATION VIEW

NOT TO SCALE

THESE DRAWINGS ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

DUPLICATION OR USE OF THESE PLANS FOR CONSTRUCTION PURPOSES WITHOUT WRITTEN PERMISSION OF AMERICAN CAVE CONSERVATION ASSOCIATION IS PROHIBITED

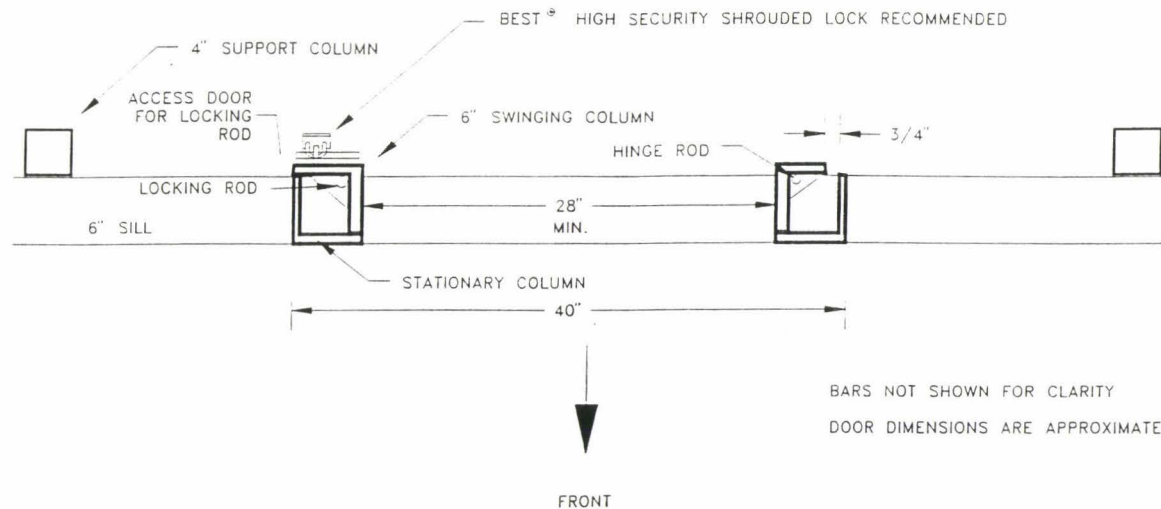
ZERO AIRFLOW RESTRICTION
BAT GATE

TYPICAL GATE DESIGN

DESIGNED:	R. POWERS	DRAFTED:	M. WASHBURN
CHECKED:		DATE:	
REVISED:	NOVEMBER, 1994	SHEET:	
© COPYRIGHT 1991, 1992, 1993 & 1994 BY AMERICAN CAVE CONSERVATION ASSOCIATION			

WARNING: OTHER DOOR DESIGNS HAVE FAILED OR HAVE BEEN BREACHED, BE SURE TO FOLLOW DETAILS EXACTLY.

NOTE: DOOR COLUMNS MAY BE PRE-FABRICATED.
HORIZONTAL BARS ARE INSTALLED FIRST
AND THEN CUT FOR DOOR INSTALLATION.



DOOR DETAIL PLAN VIEW

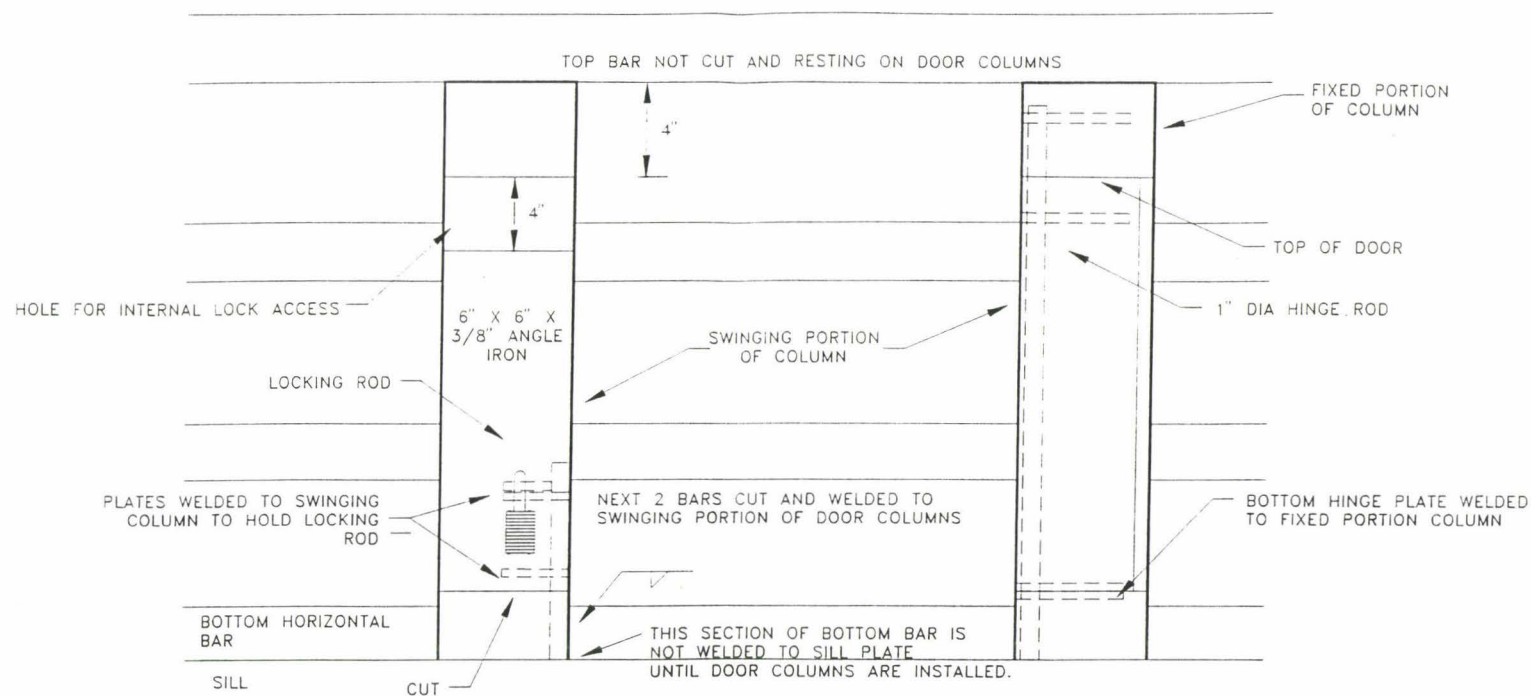
NOT TO SCALE

BARS NOT SHOWN FOR CLARITY
DOOR DIMENSIONS ARE APPROXIMATE

THESE DRAWINGS ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

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ZERO AIRFLOW RESTRICTION BAT GATE	
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DOOR DETAIL FRONT ELEVATION VIEW

NOT TO SCALE

THESE DRAWINGS ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

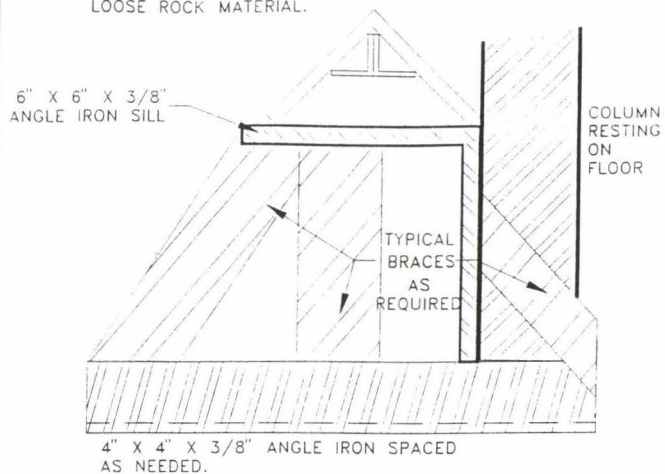
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ZERO AIRFLOW RESTRICTION
BAT GATE

TYPICAL GATE DESIGN

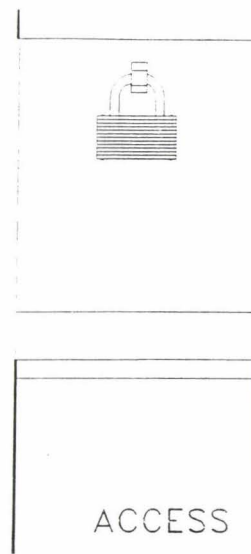
DESIGNED:	DRAFTED:
R. POWERS	M. WASHBURN
CHECKED:	DATE:
REVISED:	SHEET:
NOVEMBER, 1994	
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SILL SHALL BE EXCAVATED TO FIT THE SITE CONDITIONS, BUT MAY REST ON SOIL OR LOOSE ROCK MATERIAL.



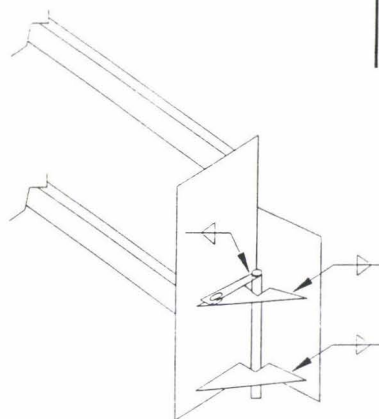
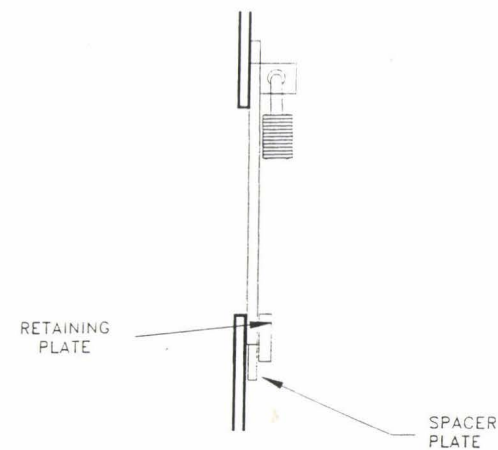
SILL DETAIL 1

NOT TO SCALE



ACCESS DOOR DETAIL

NOT TO SCALE



LOCKING MECHANISM DETAIL

NOT TO SCALE

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ZERO AIRFLOW RESTRICTION
BAT GATE

TYPICAL GATE DESIGN

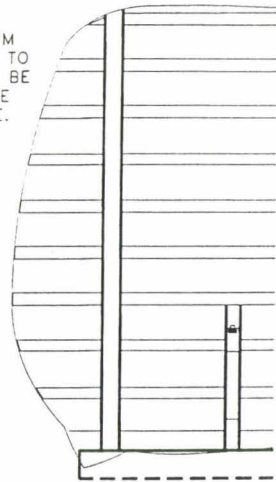
DESIGNED:	DRAFTED:
CHECKED: R. POWERS	DATE: M. WASHBURN
REVISED:	SHEET:
NOVEMBER, 1994	
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NOTE 1

EACH END SHALL HAVE A MINIMUM OF TWO OF THE BARS ATTACHED TO THE WALL. ATTACHMENTS SHALL BE SPACED AT 25% AND 75% OF THE HEIGHT, AS A GENERAL GUIDELINE.

NOTE 2

END ATTACHMENT MUST BE USED ON BARS WHICH EXTEND MORE THAN 30" BEYOND COLUMNS.



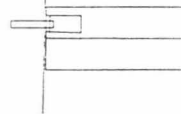
WALL

4" OR 6" ANGLE WITH HOLE DRILLED FOR PIN.

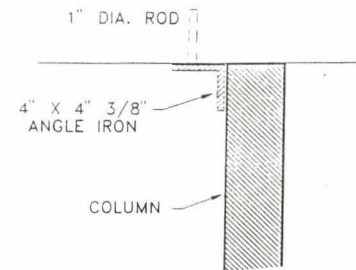


END ATTACHMENT WELDED TO HORIZONTAL BAR.

POSITION ATTACHMENTS AS CLOSE TO WALL AS POSSIBLE.



PLAN VIEW OF END ATTACHMENT



COLUMN ATTACHMENT DETAIL

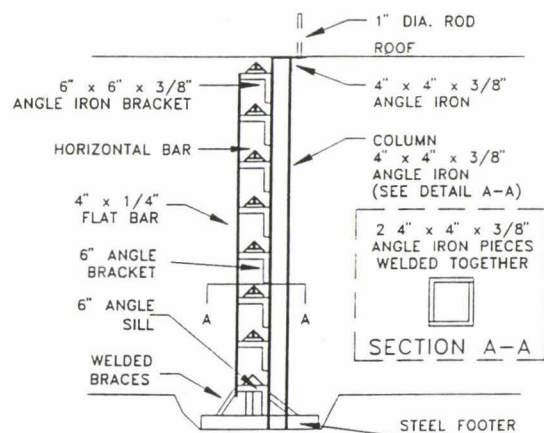
ATTACHMENT DETAILS

NOT TO SCALE

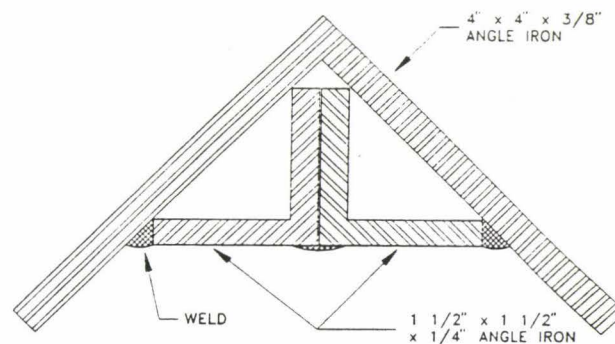
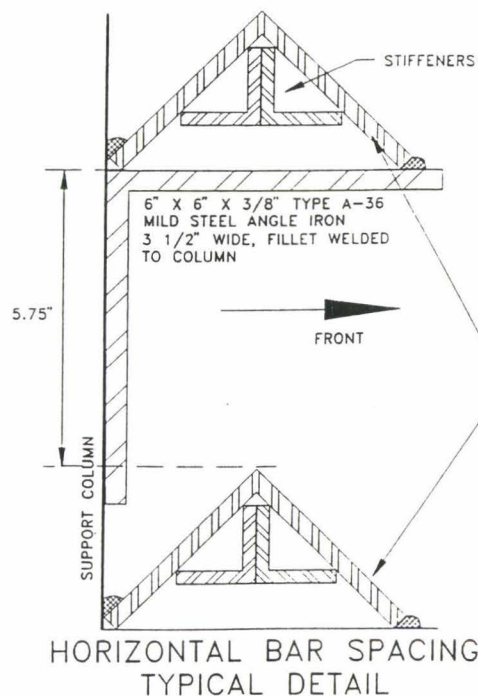
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SUPPORT COLUMN
NOT TO SCALE



STIFFENERS RUN THE FULL LENGTH OF THE HORIZONTAL BAR

STIFFENERS SHOULD BE CUT 2" SHORTER THAN ANGLE IRON BAR TO FACILITATE TRIMMING THE ENDS TO FIT THE OPENING

STIFFENERS NOT REQUIRED FOR ANGLE IRON BARS LESS THAN 4' LONG

STIFFENER DETAIL
Horizontal Bars
NOT TO SCALE

4" x 4" x 3/8" TYPE A-36 MILD STEEL ANGLE IRON

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GIFFORD PINCHOT NATIONAL FOREST

Land and Resource Management Plan

(Plan IV-62-63)

Minerals and Geology

General Technical Inventory and Evaluation, and Site Specific Technical Investigations

3. Caves will be evaluated as required by the Federal Caver Resources Protection Act of 1988. Caves determined to be significant under the Act will be considered for listing on the National Significant Caves list. Specific locations of Significant Caves are exempt from disclosure to the general public.
4. A Forest-wide, comprehensive cave management analysis should be completed within ten years after approval of the Forest Plan. Management Plans should be prepared for caves with high resource, educational, or recreational values, hazardous conditions, or heavy use. If analysis determines that cave management or protection is required, the cave should be placed in one of the following classes. Caves determined through analysis to have no significant values, and documented as such, will no longer be protected.

Class 1: Sensitive Caves

Caves considered unsuitable for exploration by the general public either because of their pristine condition, unique resources, or extreme safety hazard. They may contain resources that would be impacted by low levels of visitation. These caves are not shown on maps or discussed in publications intended for general public use such as guides, brochures, and magazines.

Class 2: Directed Access Caves

Caves with directed public access and developed for public use. These caves are shown on maps or have signs directing visitor access; they frequently have guided tours and artificial lighting. Regardless of the level of develop-

ment, public visitation is encouraged. The caves may have sensitive resources that are protected.

Class 3: Undeveloped Caves

Caves that are undeveloped or contain unmaintained or minimal developments that are suitable for exploration by persons who are properly prepared. In general, these caves contain resources that resist degradation by recreational use. However, public use will not be directed toward them.

5. Prior to ground-disturbing activities which may adversely affect them, an analysis should be prepared for caves and similar unique geological features. The analysis should document any biological, hydrological, cultural, recreational, geological, mineralogical, paleontological, educational, or scientific values. The following measures may be used to protect caves and similar geologic features:

- a. Limitation of logging, road construction, and other uses of heavy equipment above or in the vicinity of a cave with a thin roof, or [over] the course of such a cave, if there is a potential for damage.
- b. Retention of vegetation in the vicinity of a cave or cave course, if it is required, to protect the cave's micro environment.
- c. If timber harvesting is permitted in the vicinity of a cave, trees may be directionally felled away from the cave and its course.
- d. Avoidance of the alteration of cave entrances, or their use as disposal sites for slash, spoils, or other refuse.
- e. Limitation of management activities within any area draining into a cave if they may affect the cave ecosystem with sedimentation, soil sterilization, the addition of

nutrients or other chemicals, including pesticides, herbicides, fertilizers, or change the cave's natural hydrology.

f. Avoidance of diversion of surface drainage into caves.

g. Limitation of public access, if required to prevent damage to the cave resources or if there are unusual safety hazards.

h. Avoid advertising the location of caves to the general public in printed documents or by signing.

i. Scientific or educational use of caves may be permitted by the Forest Supervisor.
